DOCUMENT RESUME

ED 095 506 CS 001 308

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TITLE Excerpts from Significant Research on Comprehension (1948-1972).
PUB DATE May 74
NOTE 27p.; Paper presented at the Annual Meeting of the International Reading Association (19th, New Orleans, Louisiana, May 1-4, 1974)

EDRS PRICE MF-$0.75 HC-$1.85 PLUS POSTAGE
DESCRIPTORS *Literature Reviews; Reading; *Reading Ability; *Reading Comprehension; Reading Development; Reading Materials; *Reading Research; *Reading Skills; Reading Speed; Standard Spoken Usage; Syntax; Vocabulary

ABSTRACT

This paper presents a survey of scientific research, professional literature, and doctoral dissertations on reading comprehension done from 1948 to 1972. The following reading factors believed to affect reading comprehension were identified: fate, vocabulary, sentence structure, questioning, and purpose setting. The research pertaining to the selected factors was analyzed to develop generalizations and conclusions which were then used to formulate a partial construct of reading comprehension. Reading comprehension was found to be a complex process composed of interrelated elements which mature in accordance with the reader's proficiency in utilizing selected factors which are related to the demands of the reading task. Reading comprehension was found to be a process which was affected by the experience and ideas which the reader brings to the printed page; the relationship between the oral language patterns and the printed language patterns in the text; the reader's knowledge of grammatical structures used in the reading material; the depth and breadth of the reader's vocabulary; the types of questions asked and the location of questions in the reading material; and the reader's purpose, rate, and intellectual capacity. (Author/WR)

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# EXCERPTS FROM SIGNIFICANT RESEARCH ON COMPREHENSION (1948-1972)

by

Dr. Stephen A. Pavlak

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Reading comprehension has been the subject of many research studies, discussions, and seminars. Although it is an area which has been studied intensively, no one universally accepted definition of what constitutes reading comprehension has been offered. Consequently, a brief study of the definitions and descriptions of reading comprehension can leave the reading teacher bewildered and frustrated. The confusion seems to be caused by the variety of definitions, theories, and teaching procedures which have been used to describe reading comprehension.

Since misunderstanding and confusion do exist in determining what affects reading comprehension and how to define it, the author believes that it would be beneficial to examine research which has been done on reading comprehension. By analyzing the research and identifying selected factors which affect reading comprehension, the author will attempt to draw conclusions and to offer a definition of reading comprehension. The author will attempt to answer two major questions:

1. What effect do selected factors have on reading comprehension?
2. What conclusions about comprehension can be reached by analyzing the generalizations which were derived from the research studied?

An overall understanding of the variety of definitions for comprehension can be obtained by studying the opinions

of selected researchers. Spache and Spache[1] expressed a modern view of comprehension when they noted that the term comprehension was used glibly by many teachers and reading experts, but the meaning given the word differed from user to user. Spache[2], in attempting to clarify the problem of defining comprehension, said that a person cannot be reading unless he also comprehends. Therefore, the comprehension of the material read is the primary objective in effective reading.

Although there is a wide variety of contemporary literature available, in 1971 Simons claimed that E.L. Thorndike's 1917 description of reading comprehension as reasoning "...still almost exhausts the accumulated knowledge of the fundamental intellectual process."[3] Simons also stated that "The workings of the mind during reading comprehension still remain a great and profound mystery."[4] Monroe seems to agree with Simons when he says:

> The findings of most of the studies have raised more problems than they have solved. As a result we are far more conscious of

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[1]George D. Spache and Evelyn B. Spache, Reading in the Elementary School (2d ed.; Boston: Allyn and Bacon, Inc., 1969), p. 54.

[2]George D. Spache, Toward Better Reading (Champaign, Illinois: Garrard Publishing Company, 1966), p. 61.

[3]Herbert D. Simons, "Reading Comprehension: The Need for a New Perspective," Reading Research Quarterly, VI, No. 3 (1971), 340.

[4]Ibid.

> the reading problems which we face and are far less certain of how to answer them.[1]

The definitions of reading range in detail and complexity from Thorndike's[2] short and perhaps most cogent definition of reading as thinking to Gates'[3] definition of reading as a "process which involves the whole body." Some definitions suggested by reading experts concentrate on defining reading and comprehension by emphasizing the role of experiential background. For example, Spache[4] stated that reading is more than just obtaining meaning from the printed page because the reader's experiential background and his learnings also influence comprehension. Comprehension is more than understanding the ideas conveyed by the printed word; it is being able to integrate these new ideas with one's own concepts and being able to understand adequately the ideas which are presented. Comprehension, to Spache and to other researchers, is more than recognizing the denotations and connotations of words because, in addition to the word's meaning, one must be able to recognize

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[1]Walter S. Monroe, Encyclopedia of Educational Research (New York: MacMillan Company, 1952), p. 966.

[2]Edward L. Thorndike, "Reading as Reasoning: A Study of Mistakes in Paragraph Reading," Journal of Educational Research, VIII (June, 1917), 323-32, quoted in Nila Banton Smith, Reading Instruction for Today's Children (Englewood Cliffs, New Jersey: Prentice-Hall Inc., 1963), p. 260.

[3]Arthur I. Gates, "Character and Purposes of the Yearbook," Reading in the Elementary School, Forty-Eighth Yearbook of the National Society for the Study of Education, Part II (Chicago: University of Chicago Press, 1949), p. 3, quoted in Russell G. Stauffer, Teaching Reading as a Thinking Process (New York: Harper and Row, 1969), p. 8.

[4]Spache, op. cit., p. 61.

implied ideas and draw inferences or conclusions which are not stated in the text.

Green and Henderson also regard experience as an important ingredient in the definition of reading. They believed that "meanings arise out of the actions of individuals in relation to the environment," and they saw the nature of a person's contacts with his environment as influencing his thinking.[1] They have attempted to show what part experience plays in reading by stating that "Reading is the process of taking meaning to, in order to get meaning from language in print."[2]

The importance of experiential background can be seen if we think that when a person reads a book, there is no meaning on the page itself. The meaning is in the mind of the reader. Every mark on the page which the reader recognizes arouses an image or concept that is already in his mind. Thus the reader may and even must gain meaning from the written page. This occurs, according to Langman, "...when the writer's symbols stimulate the reader to combine or reconstruct his own experiences in a novel way."[3] DeBoer and Dallmann discuss the reader's experiential background as a major part of the reading

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[1]Richard L. Henderson and Donald Ross Green, Reading for Meaning in the Elementary School (Englewood Cliffs, New Jersey: Prentice-Hall Inc., 1969), p. 25.

[2]Ibid., p. 9.

[3]Muriel Potter Langman, "The Reading Process: A Descriptive Interdisciplinary Approach," Genetic Psychology Monographs, LXII (August, 1960), 1-40, quoted in Emerald V. Dechant, Improving the Teaching of Reading (Englewood Cliffs, New Jersey: Prentice-Hall Inc., 1964), p. 1.

act by saying:

> The order in which these images and concepts are evoked, the context in which they are called forth, and the relations between the images and concepts as revealed by the arrangement of these marks, make it possible for the reader to gain new meanings. But the process depends on what the reader brings to the printed page and on the questions he asks.[1]

Dechant also viewed the reading process as being dependent upon experience and defined reading as "the process of giving the significance intended by the writer to the graphic symbols by comparing them to one's fund of experience."[2]

One conclusion that can be assumed from these definitions is that success in reading is dependent upon the experiential background of the reader or upon the information he brings to the written page. The reader's previous experiences determine to a very large degree how much meaning he will receive from the written material. In summarizing the influence which experiential background has upon good comprehension, DeBoer and Dallmann have said, "It becomes apparent that the fundamental elements in reading comprehension derive from direct experience."[3]

Russell[4], Harris[5], DeBoer and Dallmann[6] and others believe

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[1]John J. DeBoer and Martha Dallmann, The Teaching of Reading (New York: Holt, Rinehart, and Winston, Inc., 1964), p. 12.

[2]Dechant, op. cit., p. 12.

[3]DeBoer and Dallmann, op. cit., p. 32.

[4]David H. Russell, Children Learn to Read (New York: Blaisdell Publishing Company, 1961), p. 112.

[5]Albert J. Harris, How to Increase Reading Ability (5th ed.; New York: David McKay Company, Inc., 1970), p. 7.

[6]DeBoer and Dallmann, op. cit., p. 17.

that reading is a complex process. Reading to them is dependent upon experience, but it is also dependent upon all of the higher mental processes. It involves recall, reasoning, evaluation, imagination, application, and problem-solving. Good reading to these experts then requires good thinking. The concept of reading as thinking is not confined to these experts nor is it a new idea. Smith[1] and other researchers believe that today the emphasis in reading is again on reading as thinking, and they have attempted to define reading as thinking; but in most cases the definitions which were offered were shallow descriptions of the process. Spache writes of the confusion of defining reading as thinking when he says, "...the ways in which the thinking processes of the reader affect his comprehension and, therefore, how thinking in reading can be improved are not entirely understood."[2]

In attempting to clarify the definition of reading as thinking, some other experts have also offered definitions and explanations of this concept. Comprehension is viewed as thinking by Karlin and he states, "The extent to which one engages in these thoughtful activities as he reads is really reading and thinking."[3] Guszak defined comprehension skills as, "Thinking skills that are applied prior to, during, and

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[1] Smith, op. cit., p. 257.

[2] Spache, op. cit., p. 61.

[3] Robert Karlin, Teaching Elementary Reading--Principles and Strategies (New York: Harcourt, Brace, and Jovanovich, Inc., 1971), p. 181.

after the visual scanning task by which written language is converted into associated meanings."[1] Durkin[2] agreed that children should be taught to think as they read and suggested that teachers should spend less time teaching reading and more time teaching thinking. However, the problem with this idea, according to Durkin, is that too little is known about thinking and even less is known about how to foster its growth in children. Consequently, it is difficult for teachers to teach thinking when they do not know how or what to emphasize. Karlin supported Durkin's belief and also summarized the importance of the thinking process when he said,

> Reading is a thinking and problem-solving process in which ideas are received and produced. Reading and thinking possess common roots, and to the extent that the reader processes information and ideas, reading and thinking are indistinguishable. To teach children to read then is to teach them to think.[3]

In summarizing this section on reading as thinking and the influence of experiential background on reading, it can be concluded that thinking, although not totally understood, is a vital aspect of the reading process and that experiential background is a primary factor in causing a reader to take meaning from the printed page.

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[1]Frank Guszak, Diagnostic Reading Instruction in the Elementary School (New York: Harper and Row, 1972), p. 49.

[2]Dolores Durkin, Teaching Young Children to Read (Boston: Allyn and Bacon, Inc., 1972), p. 280.

[3]Karlin, op. cit., p. 213.

Since there is limited agreement on a definition of comprehension, the author attempted to develop a definition of comprehension by analyzing selected factors which researchers have identified as affecting comprehension. Some of the factors identified as affecting comprehension were:

1. Thinking
2. Attitude
3. Interest
4. Sentence structure
5. Listening ability
6. Rate of reading
7. Vocabulary
8. Visual aids
9. Questioning and purpose setting.

From this list of factors which affect reading comprehension, the author chose to study:

1. Vocabulary as a Factor Affecting Reading Comprehension
2. Sentence Structure as a Factor Affecting Reading Comprehension
3. Rate of Reading as a Factor Affecting Reading Comprehension.

These factors were selected for inclusion in this presentation because according to research surveyed they were factors that had been frequently cited as influencing reading comprehension.

## Vocabulary as a Factor Affecting Reading Comprehension

The vocabulary of a reader and his ability to adequately comprehend the material he is reading is an area which has been frequently discussed by researchers. Spache placed a great deal of emphasis upon the role of vocabulary in influencing comprehension. He said of the importance of vocabulary,

> ...understanding the vocabulary is second only to the factor of reasoning in the process of comprehension, and some writers would say that it is even more important than reasoning....It is sufficient to say that comprehension is significantly promoted by attention to vocabulary growth.[1]

Spache and Spache reemphasized this statement by saying, "A primary influence upon the reader's comprehension is his ability to deal with vocabulary."[2] The ability to effectively understand vocabulary would necessitate, according to Spache and Spache, that a reader have adequate structural, contextual, and visual clues skills to be able to comprehend the material being read. They believed that a pupil who is working with very unfamiliar vocabulary is not able to comprehend material because the concepts are beyond his experiential background.[3]

In order to comprehend effectively, the reader must acquire a meaningful vocabulary. Therefore, according to Bond and

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[1]Spache, op. cit., p. 78.

[2]Spache and Spache, op. cit., p. 463.

[3]Ibid., p. 464.

Tinker,[1] to recognize printed symbols and to pronounce those words without understanding the meaning that is intended by the writer is not reading but verbalism. Verbalism does not allow a reader to clearly understand what he is reading. In order for a person to become a proficient reader and not merely a person who verbalizes the words, he must have acquired a sequential development of word knowledge and comprehension skills. Bond and Tinker[2] discovered through their research that the recognition of words, the understanding of word meanings, and the comprehension of the material are all interrelated aspects of a sequential reading process. They also found that comprehension basically depends upon facility in the use of concepts or meanings which are evolved from experience. However, if the concepts acquired through experience are to be of use in reading, they need to be attached to words as symbols of their meanings. Then when a reader recognizes a word or groups of words, the perception of the printed symbol stimulates the recalling or contrasting of meanings for which the symbol stands. The meanings recalled are those possessed by the reader and necessarily need to have been evolved through experience. Bond and Tinker summarized the importance of a reader having a meaningful usage vocabulary when they said,

> To be serviceable in reading, a meaning must be attached to a word, for it is only by the

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[1] Guy L. Bond and Miles A. Tinker, Reading Difficulties: Their Diagnosis and Correction (New York: Appleton-Century-Croft, Inc., 1971), p. 267.

[2] Ibid.

> use of words that meanings can be recalled. If the recalled meanings are to be precise, the words which stand for those meanings must have been in the usage vocabulary of the reader.[1]

The role of vocabulary in influencing comprehension level as discussed in this section can be summarized by using Henderson's and Green's statement that

> If a child sees and recognizes a word, he is taking meaning to it. If he goes further and devises meaning from it, then he is reading.[2]

This section of the paper has dealt with a general discussion of vocabulary whereas the following section will present a brief summary of the conclusions which were drawn from selected research studies done on vocabulary as a factor affecting reading comprehension. The major portion of the research on vocabulary and comprehension which was conducted in the last twenty-four years was found to have been completed between 1959 and 1969. Two studies which were completed by Cooper[3] and Hunt[4] found that intelligence, vocabulary, and reading ability were significantly interrelated. In addition

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[1] Ibid., p. 270.

[2] Henderson and Green, op. cit., p. 12.

[3] William H. Cooper, "Interrelationships Among General and Specialized Reading Abilities and General and Specialized Vocabularies" (unpublished Ph.D. dissertation, Northwestern University, 1955).

[4] J.T. Hunt, "Relation Among Vocabulary, Structural Analysis, and Reading," Journal of Educational Psychology, XLIV (April, 1953), 193-202.

to this, Langer[1] and Scheck[2] found that the relationship between knowing multiple meanings of words and reading comprehension was substantial. They found that there was a substantial relationship between the ability to comprehend reading material and vocabulary knowledge of both single and multiple meanings of words. Lieberman[3] and Bleyer[4] concluded from their research that children who were taught vocabulary through direct experience showed an increase in reading achievement. Based on the findings of these and other researchers it can be concluded that vocabulary is an important factor affecting comprehension. The three techniques by which vocabulary can be developed were found to be: (1) through words presented in isolation, (2) through developmental reading classes, and (3) through all curriculum areas. Each of these areas were found to affect certain aspects of vocabulary development.

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[1]John Henry Langer, "A Comparison of the Effects of Three Types of Vocabulary Development on the Reading Comprehension and Thinking Ability of Sixth Grade Children" (unpublished Ed.D. dissertation, Wayne State University, 1965).

[2]Rose Raynor Scheck, "An Investigation of Children's Knowledge of Single and Multiple Meanings of Words and Reading Comprehension" (unpublished Ed. D. dissertation, Temple University, 1964).

[3]Janet Lieberman, "The Effect of Direct Instruction in Vocabulary Concepts on Reading Achievement," ERIC document ED010985 (Bloomington, Indiana: ERIC Clearinghouse on Reading, 1967), pp. 2-6.

[4]John Francis Bleyer, "The Effect of a Words-in-Isolation Program of Vocabulary Development on Reading Comprehension Scores of Fourth Grade Subjects" (unpublished Ph. D. dissertation, University of Pittsburgh, 1970).

## Sentence Structure as a Factor Affecting Reading Comprehension

When a child is first learning to read, he is not concerned with basic sentence structure because he must recognize each word separately. The recognition of each word requires in most cases that he study the word very carefully before identifying it. Since the reader has to scrutinize each word before he can say it, there is little likelihood that he will be able to group words into thought units. Therefore, in early reading activities, the young reader is required to read sentences which contain only a noun and a verb. This practice is necessitated because of the reader's lack of vocabulary, and with the use of simple sentences it consequently causes the child little difficulty when he reads.

The main concept that a young reader should gain from reading a simple sentence is that reading is talk written down. Harris and Sipay have said of the concept of reading as talk written down and of teaching children this fact through the use of sentences that

> Sentences are the natural units of meaning in both spoken and printed language. Beginning readers who are learning that reading is talk written down are encouraged to read as if the characters were speaking.[1]

A young reader can often understand the meanings of separate words; but when they are grouped together he cannot get the meaning of a sentence, and consequently he cannot read the paragraph as if he were talking. The problem which the child

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[1]Albert J. Harris and Edward R. Sipay, Effective Teaching of Reading (2d ed.; New York: David McKay Company, Inc., 1971), p. 297.

may be encountering is that he does not understand that sentences are thought units. According to Bond and Tinker[1] this lack of understanding of sentences as thought units may be due to the fact that the child does not see that certain relationships exist between elements in each sentence. For this reason, studying the interrelationships of the parts of a sentence is frequently of value.

DeBoer and Dallmann have said of the problem of seeing interrelationships between sentence elements: "Because sentence comprehension is more that word recognition and because an understanding of sentences is essential to the comprehension of longer selections, the reader should become skillful in reading sentences as whole units."[2] The reader should therefore be taught to find the basic parts of a sentence; and in a simple sentence, which young readers are learning to read, the basic parts of a sentence would be the subject and the predicate. Problems with reading sentences arise according to Harris and Sipay when "...the complexity of the sentence structure in reading material exceeds the complexity of the sentences to which the children are accustomed in listening and speaking."[3] Children will have little problem in reading sentences and getting meaning from them "If the book uses words that children understand and can recognize, and employs

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[1]Bond and Tinker, op. cit., p. 268.

[2]DeBoer and Dallman, op. cit., p. 139.

[3]Harris and Sipay, op. cit., p. 297.

familiar sentence patterns...."[1] Nila Banton Smith summarized the importance of helping pupils to understand basic sentence structure when she said,

> Basic sentence patterns are of great importance; in fact they are said to be the backbone and central nervous system of language. Linguists state that a knowledge of word function and word order enables a pupil to analyze a sentence which he does not understand when someone else is speaking or when he is reading.[2]

The following section of this paper will summarize the conclusions which were obtained from various studies on sentence structure. In summarizing the "Effect of Sentence Structure on Reading Comprehension," it can be said that most of the investigations conducted in this area were completed between the years 1959 and 1969. According to Ruddell[3] and Tatham[4] reading comprehension was found to be a function of the similarity of the oral patterns of language structure used in reading materials. It was found that reading comprehension scores on material which used high frequency oral language patterns were higher than were reading comprehension scores on materials which used

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[1] Ibid.

[2] Smith, op. cit., p. 60.

[3] Robert B. Ruddell, "Effect of the Similarity of Oral and Written Patterns of Language Structure on Reading Comprehension," Elementary English, XLII (April, 1965), 403-10.

[4] Susan M. Tatham, "Reading Comprehension of Materials Written With Select Oral Language Patterns: A Study at Grades Two and Four" (unpublished Ph. D. dissertation, University of Wisconsin, 1968).

infrequent oral language patterns. Research by Bormuth, Manning, Carr, and Pearson,[1] Sauer,[2] Strom,[3] Reed,[4] and O'Donnell[5] showed that there was a relationship between children's knowledge of grammatical structure and their ability to comprehend in reading. Further analysis revealed that according to O'Donnell,[6] Ruddell,[7] and Groesbeck[8] there was a relatively high correlation between intelligence and reading ability.

Based on the research analyzed, it can be concluded that knowledge of syntactical structure is a vital key to improving reading comprehension. The knowledge of syntactical structure was then found to be composed of three different parts: (1) type of language structure, (2) grammatical structure, and (3) knowledge of figurative language.

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[1]J.R. Bormuth, et al., "Children's Comprehension of Between and Within-Sentence Syntactic Structures," Journal of Educational Psychology, LXI (October, 1970), 349-57.

[2]Lois E. Sauer, "Fourth Grade Children's Knowledge of Grammatical Structure and Its Relationship to Reading Comprehension" (unpublished Ph.D. dissertation, University of Wisconsin, 1968).

[3]Ingrid M. Strom, "Does Knowledge of Grammar Improve Reading?" English Journal, XLV, No. 3 (March, 1956), 129-33.

[4]Estella E. Reed, "An Investigation of the Relative Effect of the Study of Syntax and Paragraph Structure on Reading Comprehension of Monolingual and Bilingual Pupils in Grade Seven" (unpublished Ed. D. dissertation, Indiana University, 1966).

[5]Roy C. O'Donnell, "A Study of the Correlation Between Awareness of Structural Relationships in English and Ability in Reading Comprehension," Journal of Experimental Education, XXXI, No. 3 (March, 1963), 313-16.

[6]Ibid.

[7]Ruddell, op. cit.

[8]Hulda G. Groesbeck, "The Comprehension of Figurative Language by Elementary Children--A Study in Transfer" (unpublished Ed. D. dissertation, Oklahoma University, 1961).

## Rate of Reading as a Factor Affecting Reading Comprehension

Paul Witty in describing the background about rapid reading said, "Interest in increasing speed of reading was evident in the professional literature as early as the period 1920 to 1930 when studies showed the possibilities of improving speed of reading in relatively short periods of time with gains in comprehension."[1] According to Witty,

> During the period of 1930-1940, knowledge concerning the possibility of making improvement in speed of reading was widely publicized. The success which the armed forces had in having men identify rapidly moving planes and warships intensified the interest in rapid reading of printed materials.[2]

In discussing the research done on rate of reading during this same period, Harris said,

> There was a voluminous amount of literature written about the relationship between rate of reading and reading comprehension, much of which was completed before 1940. The degree of correlation between the two areas was found to range from low negative to high positive.[3]

Nila Banton Smith in discussing reading rate said that the following factors had been learned about reading rate through research: (1) Speed can be increased through training, and (2) The faster reader reads with the best understanding of content.[4] The early studies arrived at these conclusions

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[1]Paul A. Witty, "Rate of Reading--A Crucial Issue," Journal of Reading, XIII, No. 2 (1969), 103.

[2]Ibid., p. 104.

[3]Albert J. Harris, "Research on Some Aspects of Comprehension: Rate, Flexibility, and Study Skills," Journal of Reading, XII, No. 13 (1968), 205.

[4]Smith, op. cit., 358.

without any restrictions, but later studies imposed guidelines on the generalizations.

Some authors viewed rate and comprehension as being positively related and believed that the faster reader was the better reader, and other authors did not think that speed was always related to good comprehension. Spache and Spache[1] viewed rate as significantly affecting comprehension, but they did not think that rapid reading was synonymous with good comprehension or that good readers were necessarily fast readers. Nila Banton Smith,[2] after reviewing a number of studies, came to believe that discretion should be used in interpreting the widely accepted inference that speed and comprehension always go together. She believed that usually they do, but that sometimes they do not. Rauch and Weinstein in discussing reading rate said that it depends upon four factors: (1) the reader's background of experience, (2) the difficulty of the reading selection, (3) the type and difficulty of the questions used to check comprehension, and (4) the reader's purpose.[3]

DeBoer and Dallmann supported Spache and Spache when they said that rate of reading and comprehension are not highly related. They stated, "Although there is a positive correlation

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[1]Spache and Spache, op. cit., pp. 468-69.

[2]Smith, op. cit., p. 358.

[3]Sidney J. Rauch and Alfred B. Weinstein, "A Slow Look at Speed Reading," Journal of Reading, XI, No. 5 (1968), 354.

between rate of reading and quality of comprehension, it cannot be automatically assumed that because a person reads fast he necessarily reads well."[1] Letson perhaps best summarized the controversy which exists about comprehension and rate of reading when he said, "The matter of the interrelations of speed and comprehension in silent reading has brought forth numerous studies with considerable controversy and little clear-cut agreement."[2]

After studying and analyzing various research studies on "Rate of Reading as a Factor Affecting Reading Comprehension," it was concluded that the bulk of the research studies on this topic were conducted between the years 1959 and 1969. In research studies by Carlson[3] and Thalberg[4] the ability to retain verbal information was found to be a function of intellectual ability. Skarbeck,[5] Griffin,[6] and Berger[7] discovered

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[1]DeBoer and Dallmann, op. cit., p. 131.

[2]C.T. Letson, "Speed and Comprehension in Reading," Journal of Educational Research, LII, No. 2 (October, 1958),49.

[3]Thorsten R. Carlson, "Relationship Between Speed and Accuracy of Comprehension," Journal of Educational Research, XLII, No. 7 (March, 1949), 500-12.

[4]S.P. Thalberg, "Reading Rate and Immediate Versus Delayed Retention," Journal of Educational Psychology, LVIII, No. 6 (December, 1967), 373-78.

[5]James Frances Skarbeck, "The Effect of a Program Emphasizing Rate of Comprehension Upon Rate of Reading and Comprehension at the Sixth Grade Level" (unpublished Ed. D. dissertation, University of Maryland, 1965).

[6]Vernon Haywood Griffin, "A Study Designed to Investigate Some Aspects of Forced Increase in Rate of Reading on the Reading Comprehension of a Selected Group of Fifth Grade Pupils" (unpublished Ed. D. dissertation, University of Houston, 1966).

[7]Allen Berger, "Effectiveness of Four Methods of Increasing Reading Rate, Comprehension, and Flexibility" (unpublished Ed. D. dissertation, Syracuse University, 1966).

through their research that pupils who participated in a program emphasizing rate of comprehension achieved greater increases in rate of reading than did pupils who did not participate in the program. The question of rate of reading as it was related to work-study type reading was analyzed by Skarbeck[1] and Shores[2] who found that comprehension of work-study materials or study-type materials was not related to rate of reading comprehension. An important influence on rate of reading and comprehension was found by Griffin,[3] Carlson,[4] Shores,[5] Lackman[6] and Nickolaw[7] to be the purpose for reading the materials. Letson[8] and Shores and Husbands[9]

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[1] Skarbeck, op. cit.

[2] J. Harlan Shores, "Are Fast Readers the Best Readers?" Elementary English, XXXVIII, No. 4 (April, 1961), 236-45.

[3] Griffin, op. cit.

[4] Carlson, op. cit.

[5] Shores, op. cit.

[6] Thomas Warren Lackman, "Effects Upon Comprehension and Reading Rate Under Four Prequestion Conditions" (unpublished Ph. D. dissertation, University of Delaware, 1970).

[7] A. Constantine Nickolaw, "Reading for Purpose: Instruction and Practice Effects on Rate, Comprehension, Flexibility in a Middle School Sixth Grade" (unpublished Ph. D. dissertation, Syracuse University, 1969).

[8] Letson, op. cit.

[9] J. Harlan Shores and Kenneth L. Husbands, "Are Fast Readers the Best Readers?" Elementary English, XXVII, No. 1 (January, 1950), 52-57.

discovered from their research that fast readers were not necessarily the best readers.

In analyzing what factors significantly influence rate and comprehension, it was decided from the research studied and the conclusions of the studies that five areas affect rate of reading and comprehension: (1) thinking ability, (2) flexibility of rate as related to purpose, (3) perceptual factors, (4) purpose for reading, and (5) retention time.

A Definition of Comprehension

In conclusion, based on the findings obtained from the study, the following definition of comprehension is proposed.

Reading comprehension is a complex process composed of interrelated elements which mature in accordance with the reader's proficiency in utilizing selected factors which are related to the demands of the reading task. Reading comprehension is therefore tempered by the following:

1. The experiences and ideas which the reader brings to the printed page,
2. The relationship which exists between the oral language patterns and the printed language patterns in the text,
3. The reader's knowledge of the grammatical structures used in the reading material,
4. The depth and breadth of the reader's vocabulary,
5. The types of questions asked and the location of the questions in the reading material,
6. The reader's purpose for reading the material, and
7. The intellectual capacity of the reader.

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